

LISTING OF ALL CLAIMS

1. (Currently Amended) A process for producing a an orthopedic component, comprising:
 - a. casting a blank ~~using in~~ a metal mold ~~which imparts~~ providing sufficient conductive heat transfer from the blank to rapidly cool ~~achieve rapid~~ ~~cooling of the blank in order to~~ and produce a blank ~~which features~~ a refined grain structure therein ~~sufficient to prevent cracking or non-uniform flow during forging;~~ and
 - b. subsequently forging the blank to further refine the microstructure by further reducing grain size, and thereby produce said component.
2. (Original) A process according to claim 1 in which the blank is cast from a cobalt chrome alloy.
3. (Original) A process according to claim 2 in which the cobalt chrome alloy is a Co-28Cr-6Mo alloy.
4. (Original) A process according to claim 1 in which the blank is cast from a titanium alloy.
5. (Original) A process according to claim 1 in which the blank is cast from a zirconium alloy.

6. (Original) A process according to claim 1 in which the blank is cast from a stainless steel alloy.

7. (Original) A process according to claim 1 in which the casting process is a gravity metal mold process.

8. (Original) A process according to claim 1 in which the casting process is a vacuum die casting process.

9. (Currently Amended) A process according to claim 2 in which the blank after casting and before forging has features a an average grain size smaller than 300 μm .

10. (Currently Amended) A process according to claim 2 in which the blank after casting and before forging has features a an average grain size smaller than 150 μm .

11. (Currently Amended) A process according to claim 2 in which the blank after casting and before forging has features an ultimate tensile strength of at least 665 MPa.

12. (Original) A process according to claim 3 in which the component after forging complies with ASTM F-799-96.

13. (Currently Amended) A process for producing an orthopaedic component, comprising:

a. casting a blank from a cobalt chrome alloy ~~using~~ in a metal mold ~~which imparts~~ providing sufficient conductive heat transfer from the blank to ~~achieve cooling of~~ cool the blank ~~in order to~~ and produce a grain size smaller than 300 μm and ultimate tensile strength of at least 665 MPa; and

b. subsequently forging the blank to further refine the microstructure by further reducing grain size, and thereby produce ~~said component, the~~ a component complying with ASTM F-799-96.

14. (Original) A process according to claim 13 in which the casting process is a gravity metal mold process.

15. (Original) A process according to claim 13 in which the casting process is a vacuum die casting process.

16. (Currently Amended) A process according to claim 13 in which the average grain size of the blank is smaller than 150 μm .

Claims 17-69 (Cancelled)

70. (New) A process according to claim 1, wherein the forging results in a reduction in average grain size by approximately 95%.

71. (New) A process according to claim 1, wherein the average grain size after forging is at most 17.1 μm .

72. (New) A process according to claim 13, wherein the forging results in a reduction in average grain size by approximately 95%.

73. (New) A process according to claim 13, wherein the average grain size after forging is at most 17.1 μm .